

FIRST BI-MONTHLY PROGRESS REPORT
UNIVERSITY OF ALASKA
ERTS PROJECT 110-14

September 30, 1972

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E72-10128.
CR - 128182

- A. TITLE OF INVESTIGATION: Feasibility Study for Locating Archaeological Village Sites by Satellite Remote Sensing Techniques
- B. PRINCIPAL INVESTIGATOR/GSFC ID: Dr. John P. Cook/UN597
- C. PROBLEMS IMPEDING INVESTIGATION: NASA aircraft data arrived just prior to this date. No requested ERTS data has arrived.
- D. PROGRESS REPORT:

1. Accomplishments during reporting period: In order to develop reliable signatures of abandoned village sites, a field trip was undertaken to test site 315. This expedition was largely Archaeological in nature, and was not funded as part of U of A ERTS Project 14. Funding was provided by the University of Alaska and State of Alaska funds. A preliminary report of the results of this investigation was given at the 23rd Alaskan Science Conference (abstract attached). Preparation of the final report awaits carbon-14 analysis. A significant result of this trip was the accurate determination of the location of "old fish camp", a very large abandoned village site whose location had previously only been sketched. "Old fish camp" and two other nearby sites will be used as ERTS training areas.

A detailed vegetational analysis of "old fish camp" was performed to aid in signature development and data interpretation. Low altitude aerial photographs of the site were obtained. This trip was performed by W. J. Stringer and E. J. Dixon Jr., representing the U of A Anthropology Department.

Upon return from the field expedition, one of us (WJS) participated in the NASA aircraft data acquisition flights for sites 315 and 316. The conditions at the time of the flights were quite satisfactory. A quick scan of the aircraft data which has just arrived indicates that the data is of high quality.

The field trip quit site 315 on July 19th. The aircraft photographic data was obtained on July 23rd. On July 25th ERTS imagery of test site 315 was obtained and was of sufficient quality to be ordered for analysis. Hence, optimum data acquisition has been performed.

2. Plans for next reporting period: NASA aerial photographic imagery of test sites will be analyzed to provide reliable signature for abandoned village sites. Final report of field expedition will be prepared.

(E72-10128)

FEASIBILITY STUDY FOR LOCATING

ARCHAEOLOGICAL VILLAGE SITES BY SATELLITE

REMOTE SENSING TECHNIQUES Bimonthly

Progress Report J.P. Cook (Alaska Univ. College.)

30 Sep. 1972 4 p

CSCI 08B G3/13

Unclass

N72-32376

00128

E. SIGNIFICANT RESULTS:

(See attached sheet)

F. PUBLICATIONS:

None

G. RECOMMENDATIONS:

None

H. CHANGES IN STANDING ORDER FORMS:

None

I. ERTS IMAGE DESCRIPTIONS FORMS:

No forms are submitted because no ERTS data have been received.

J. DATA REQUEST FORMS:

Project 110-14 submitted a request on Sept. 15, 1972.

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PRINCIPAL INVESTIGATOR: John P. Cook

TITLE OF INVESTIGATION: Feasibility Study for Locating Archaeological Village
Sites by Satellite Remote Sensing Techniques

DISCIPLINES: Archaeology

SUBDISCIPLINES: Demography, Interpretation techniques development

SUMMARY OF SIGNIFICANT RESULTS:

As a result of ground-truth activities, the accurate geographic location of "old fish camp" was established as $64^{\circ}12'38''\text{N}$, $158^{\circ}30'42''\text{W}$. Previously the location was given only on a map sketched in 1935.

REMOTE SENSING OF ALASKAN ARCHAEOLOGICAL SITES: A PRELIMINARY REPORT

by

E. James Dixon and William J. Stringer

Historically, many Alaskan archaeological sites have been detected simply by observation of particular vegetational variations known to indicate such sites. This preliminary report deals with the initial stages of a study to develop methods of detection of such sites by high altitude aircraft and satellite remote sensing techniques, and is concerned mainly with the results at a "ground truth" survey performed at "old fish camp" in the vicinity of Kaltag, Alaska.

The major reasons for vegetational variations leading to site identification have been found to be (1) disruption of the original flora, (2) an increase of soil nutrients due to cultural deposition, and (3) ground disturbance related to dwelling construction, etc. The vegetational changes on the site can be related to past modification of the environment by human activities through (1) the period of occupation, (2) the technological development, and (3) the economic patterns of the former occupants.

The technology of remote sensing of archaeological sites and the anticipated techniques to be utilized in this study are outlined.